10-7-10

To: Council and Staff

From: Bryan Buckman

In accordance with the Safe Drinking Water Act, Title 22, CCR, Section 64463.4 notice was sent to water customers and posted on the City website on October 1-2010 to notify them that The City of Trinidad was in violation of the Safe Drinking Water Act. The City is required to notify customers of a violation within 30 days upon receipt of a State Department of Public Health letter of violation, which was fulfilled.

The following required language was used: "The average level of Haloacetic acids (HAAs), byproducts of the chlorination of your drinking water, exceeded the maximum contaminant level (MCL) allowed. MCL for HAAs is 60 parts per billion. The Running Annual Average (RAA) of the four quarterly samples ending in the second quarter 2010 was 81.0 parts per billion (ppb), and the RAA ending in the third quarter 2010 was 79 ppb. Haloacetic Acids form when chlorine interacts with total organic carbon in the water."

The following language was also included as required to address health concerns: "*Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer."*

Simply put, not much is known about potential health impacts as monitoring for these particular disinfection byproducts(DBPs) just began fairly recently and the impact may require several years of exposure.

DBPs form in our system when chlorine used as a disinfectant reacts with organic carbon in our water. Disinfection is required as well as a certain level of residual disinfectant in our distribution system. Chlorine is added at our treatment plant following filtration as it enters our distribution system after removal of filterable organic carbon.

Total organic carbon (TOC) is comprised of dissolved organic carbon (DOC) and filterable organic carbon. DOC is dissolved in the water making it un-filterable.

In 2006 The City ceased adding pre-treatment chlorine to the raw water containing higher levels of filterable organic carbon prior to filtration in an effort to mitigate formation of DBPs.

Based on sampling performed in June of this year the treatment technique employed by The City is highly effective at removing filterable carbon prior to disinfection. DOC accounts for about half of our TOC. The City presently employs no treatment technique to remove DOC.

As has been discussed in the past, multiple chlorine injection points in our distribution system could potentially mitigate DBP formation by reducing the amount of total chlorine needed and eliminating relatively high doses at the singular injection point at the treatment plant needed to maintain a residual of disinfectant.

This coming rainy season Water Dept. staff will actively be pursuing various treatment methods and modifications to mitigate DBP formation as DBP precursors are at the highest levels in the rainy season.